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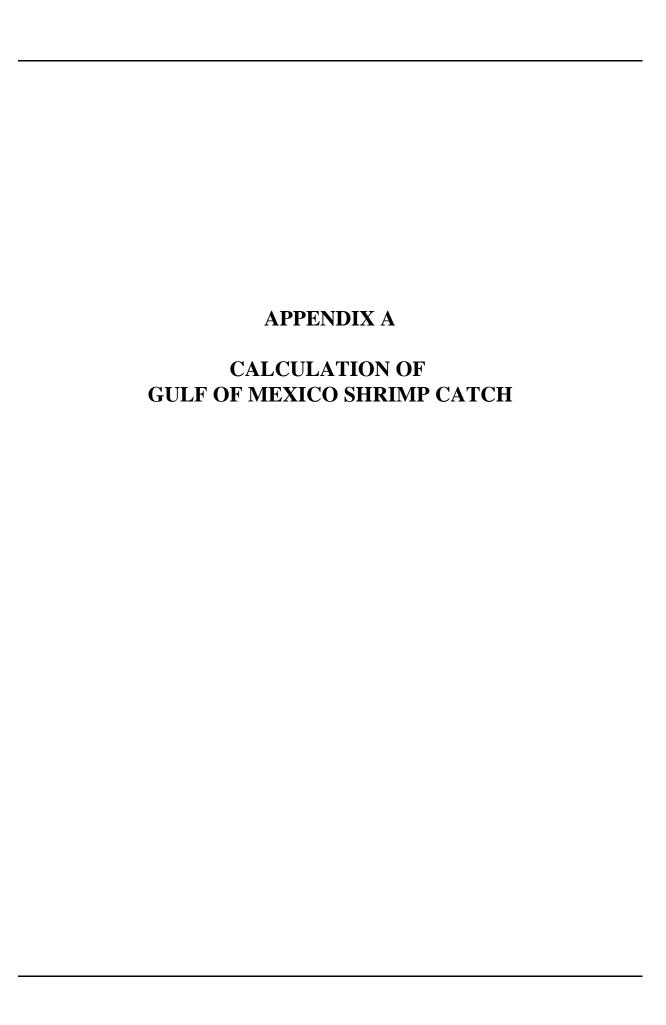
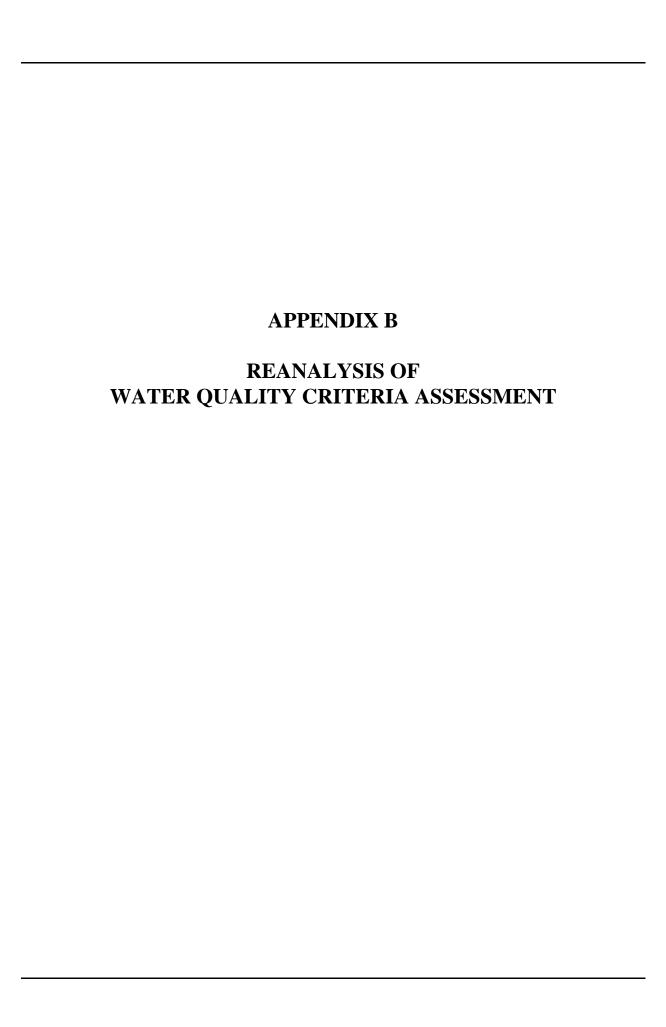


Exhibit A-1. Calculation of Gulf of Mexico Shrimp Catch

	Texas	Louisiana	Source/Comment
Landings (lbs)	75,078,833	88,229,189	NMFS, 1997/Avg. of 1995-96 landings
Catch:Landings Ratio	0.85	1.23	Offshore Environmental Assessment, Table 3-9 (Avanti, 1993)
Catch (lbs)	63,817,008	108,657,202	Landings * Catch/Landings ratio
Catch by Location (lbs) 0-3 miles Coastal Offshore 3-80 miles	36,758,597 24,517,984 12,240,613 27,058,411	62,586,549 47,252,844 15,333,704 46,070,654	Offshore Environmental Assessment, Table 3-9 (Avanti, 1993)/catch * 0.576 = 0-3 mile portion of catch 0-3 mile portion * 0.668 (TX) or 0.755 (LA) determines portion of 0-3 mile segment that is offshore (as opposed to coastal)
Offshore Area (mi ²) 0-3 mile 3-80 mile	1,107 28,413	1,314 33,726	Offshore Environmental Assessment, Table 3-11 (Avanti, 1993)
Catch/Area (lbs/mi²) 0-3 mile 3-80 mile	11,057 1,331	11,669 1,752	
Weighted Average Catch (lb/mi²)	11,443		Assumes all shallow wells drilled are in the Territorial Seas (0-3 mi); weighted by total catch/state





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, D.C. 20460

OFFICE OF WATER

December 29, 1998

MEMORANDUM

TO: Administrative Record, Synthetic-Based Drilling Fluids Effluent Guideline

FROM: Kathy Zirbser

SUBJECT: Revised Federal Water Quality Criteria

Water quality analyses in the Environmental Assessment of the Proposed Effluent Limitations Guidelines Standards for Synthetic-Based Drilling Fluids and Other Non-Aqueous Drilling Fluids in the Oil and Gas Extraction Point Source Category (hereafter referred to as the Environmental Assessment) are based on national water quality criteria as recommended by EPA in February 1997. These water quality criteria are now superseded by the recently revised criteria as published in the Federal Register on Thursday, December 10, 1998 (attached). There is insufficient time to incorporate the revised criteria into the Environmental Assessment Document prior to rule proposal. EPA has, however, conducted an analysis to determine how the analysis would change incorporating the new 1998 criteria recommendations. This analysis is attached hereto.

Changes in criteria for four pollutants affect the analysis. The criteria changes are as follows (in redline/strikeout format):

	National Recommended Water Quality Criteria				
Pollutant	Saltwater Acute (µg/l)	Saltwater Chronic (µg/l)	Human Health for Consumption of Organisms Only (µg/l		
Arsenic	69	36	0.14		
Copper	2.4 4.8	2.4 3.1			
Mercury	1.8	0.025 0.94	0.15 0.051		
Phenol			4,600,000		

In the Environmental Assessment water quality assessment, modeled pollutant concentrations are compared to the most stringent of the saltwater acute, saltwater chronic, and human health (organism consumption) criteria. With the above changes to the national recommended water quality criteria, these most stringent values change as follows:

Pollutant	Most Stringent Criterion for Comparison to Modeled Concentrations (μg/l)			
Arsenic	0.14 36			
Copper	2.4 3.1			
Mercury	0.025 0.051			
Phenol	4,600,000 No criterion			

For each of the above pollutants, the criterion for comparison with modeled pollutant concentrations becomes less stringent. As a result, the number of modeled criteria exceedances for pore water is reduced (for the water column analysis, no exceedances are projected, as was the case using the 1997 criteria). The total number of projected exceedances for model wells (under both current practice and the discharge option) is reduced from 19 (using 1997 criteria) to 10 (using 1998 criteria). The changes in exceedances are as follows:

Factors by Which Pore Water Pollutant Concentrations at the Edge of the 100-meter Mixing Zone Would Exceed Federal Water Quality Criteria Recommendations for each Regulatory Option and Model Well^(a)

		Shallow Water			Deep Water					
			Development Well		Exploratory Well		Development Well		Exploratory Well	
Discharge Region	Pollutant	Current Practice	Discharge Option	Current Practice	Discharge Option	Current Practice	Discharge Option	Current Practice	Discharge Option	
Gulf of Mexico	Arsenic	1.3 	(c)	2.7 		1.9 	1.1 	4.3 	2.5 	
	Chromium			1.7		1.3		2.8	1.6	
	Mercury							1.2 		
	Metals Composite ^(b)	1.1		2.3	1.3	1.7		3.7	2.1	
California	Arsenic			Not applicable		1.2 		Not applicable		
	Metals Composite ^(b)			Not applicable		1.1 		Not applicable		
Cook Inlet, Alaska	Arsenic			Not applicable		Not applicable		Not applicable		
	Metals Composite ^(b)			Not applicable		Not applicable		Not applicable		

⁽a) There would be no exceedances for any pollutants with the zero discharge option.

⁽b) Metals composite includes cadmium, copper, lead, nickel, silver, and zinc.

⁽c) "---" indicates no exceedances are predicted.